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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/055,256	01/22/2002	Anders Dale	HGS-001	6746

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IANDIORIO & TESKA
260 BEAR HILL ROAD
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EXAMINER

ROY, BAISAKHI

ART UNIT	PAPER NUMBER
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3737

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/055,256

Applicant(s)

DALE ET AL.

Examiner

Baisakhi Roy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-67 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-67 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/04, 11/02, 9/02</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-43, 50, and 51 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims are directed to a data structure or a mere compilation of data.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-7 and 13-68 are rejected under 35 U.S.C. 102(e) as being anticipated by deCharms (20020103428).

Regarding claims 1-7 and 13, deCharms discloses an atlas comprising a value representative of a magnetic property of a spatial location of a subject with said value corresponding to a tissue type proton density, T1, and T2 value ([0188-0189] [0193]

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[0221] [0264] [0459-0460] [0525] [0619-0620]). deCharms further teaches said value to correspond to a diffusion tensor imaging and a T2* value ([0377] [0460] [0525] [0645]).

Regarding claims 14-23, 31-36, and 40-43, deCharms teaches said atlas comprising values representative of a statistical representation of a magnetic property of a plurality of spatial locations of a plurality of subjects with said statistical representation to include a mean, variance, probability values of a tissue type at each corresponding spatial location of the subjects ([0346] [0354] [0376] [0414] [0435] [0439] [0441] [0465] [0467] [0471] [0485] [0614-0615]).

Regarding claims 24-26, 37, and 38, deCharms teaches said values of a statistical representation to be scanner-specific, population-specific, and acquisition sequence-specific ([0180] [0189] [0256] [0264] [0270] [0326] [0328] [0329]).

Regarding claims 28-30, deCharms teaches said atlas to contain information relative to various coordinate systems to orient an image relative to a subject and data relative to image intensity of the subjects ([0329] [0445] [0459] [0473] [0485] [0525-0526] [0528] [0531] [0568] [0609]).

Regarding claim 27 and 39, deCharms teaches said values of a statistical representation to include a value from TR, TE, and flip angle ([0270] [0628]).

Regarding claims 44-49, 61-68, deCharms discloses a system and method for obtaining information regarding a subject by using a magnetic resonance scanner, an atlas comprising values representative of the magnetic property of a spatial location of a subject, a processor adapted to receive information from the scanner and configured to read the atlas to determine volumetric measurements of organ structures of the subject,

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and determining alignment of the MR scan based on the atlas ([0160] [0164] [0167] [0178] [0326-0330]). deCharms teaches said atlas to include a plurality of nodes with each node including statistical information such as mean and variance derived from a number of subjects of a specific population and for a specific scanner model for a specific magnetic resonance sequence ([0180] [0256] [0264] [0270] [0326] [0328] [0329] [0439] [0465] [0471] [0485] [0525] [0625]).

Regarding claims 50-58, deCharms teaches a system and method for obtaining information regarding a subject, as set forth above, by providing magnetic property values corresponding to tissue types and subject, labeling tissue types corresponding the magnetic resonance property values pertaining to the subject by the use of the atlas having said MR values derived from other subjects, providing and recording a magnetic property value in a node of the atlas corresponding to a voxel of said first magnetic resonance modality volume. The reference further teaches correcting distortion of the each of the magnetic resonance modality volumes caused by motion during acquisition ([0260] [0449]).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 8, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over deCharms in view of Bassar et al. (6845342). deCharms as set forth above,

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teaches the use of diffusion tensor imaging as one of the methods to measure physiological activity from a subject but do not explicitly teach the derived variables such as anisotropy and diffusivity. In the same field of endeavor, Bassar et al. disclose a diffusion tensor magnetic resonance imaging method to determine the statistical significance of observed changes in diffusion tensor and calculate diffusivity and anisotropy values (col. 15 lines 1-10). It would have therefore been obvious to one of ordinary skill in the art to use the teaching by Bassar et al. to modify the teaching by deCharms for the purpose of analyzing magnetic properties computed from images such as diffusion tensor magnetic resonance signals.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO 892 for relevant references.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Baisakhi Roy whose telephone number is 571-272-7139. The examiner can normally be reached on M-F (7:30 a.m. - 4p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian L. Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

b.k.

BR


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